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EXAMINER
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ARNOLD, ERNST V

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/645,576

Filing Date: August 21, 2003

Appellant(s): VERMA ET AL.

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Edward A. Squillante, Jr.  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 9/12/07 appealing from the Office action  
mailed 7/12/07.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,441,726	Mitchnick et al.	8-1995
5,609,852	Galley et al.	3-1997

6,267,949	Halls	7-2001
6,949,248	Nishihama	9-2005

Nishihama WO 02/24153 3/28/02.

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4-9 and 21-23 remain/are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitation "solid asymmetric particles". It is unclear to the Examiner the metes and bounds of "solid asymmetric particles". The instant specification discloses that "The solid asymmetric particles may be particles of a fatty acid containing from 12 to 22 carbon atoms..." (page 5, lines 10-11). The Examiner suggests "solid asymmetric fatty acid particles". Claims 4-9 and 21-23 are indefinite because they are dependent on an indefinite base claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 4-9 and 21-23 remain/are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchnick et al. (U.S. 5,441,726) in view of Galley et al. (U.S. 5,609,852) and Halls (U.S. 6,267,949).

Applicant claims a process for incorporating ZnO particles in a cosmetic composition comprised of solid asymmetric particles, comprising:

Melting said solid asymmetric particles to form melted fatty acid;

Adding un-coated ZnO particles to the melted fatty acid to form a mixture of ZnO and fatty acid;

Heating said mixture to a temperature of less than about 80°C for about 5 to about 10 minutes;

Cooling said to a temperature of about 50°C, thereby quenching any reaction between said ZnO and said fatty acid.

**Determination of the scope and content of the prior art**

**(MPEP 2141.01)**

Mitchnick et al. disclose a creamy foundation composition of the following components:

Composition		
(1) stearic acid	5 wt. %	
(2) lipophilic glycerol monostearate	2.5	10
(3) ceteostearyl alcohol	1	
(4) propylene glycol monostearate	3	
(5) squalane	7	
(6) olive oil	8	
(7) purified water	the balance	
(8) antiseptic	a suitable amount	15
(9) triethanolamine	1.2	
(10) sorbitol	3	
(11) titanium oxide	10	
(12) talc	5	
(13) coloring pigment	a suitable amount	
(14) zinc oxide rods	8	
(15) perfume	a minute amount	20

The foundation was prepared by mixing components 11 to 14. The un-coated zinc oxide rods (8% by weight) can be 100 nm in diameter (Column 13, lines 20 and 26-27). Components 7 through 10 are mixed together to form a solution (Column 13, lines 7-28). The zinc oxide containing component is dispersed in the solution of components 7-10 and heated to 75 °C. Components 1 through 6 (containing 5 % by weight stearic acid) are mixed and heated to 80 °C to form a solution which is then added to the solution containing zinc oxide to produce an emulsion (Column 13, lines 30-33). The emulsion is cooled under stirring to 50 °C and the final perfume ingredient is added (Column 13, lines 33-35). The mixture is cooled under stirring. The Applicant has

defined asymmetric particles as fatty acids of 12 to 22 carbon atoms with stearic acid being a preferred asymmetric particle (Specification, pages 8 and 9). The cosmetic preparation of Mitchnick et al. is comprised of 5 % by weight stearic acid and 8 % by weight of zinc oxide. Mixing of these components at a temperature less than about 80 °C and cooled under stirring to a temperature of 50 °C to quench the reaction between ZnO and stearic acid would produce the solid asymmetric particles of the instant invention in at least 10% by weight of the composition (instant claim 7). In instant claim 8, the Examiner interprets about 60 °C to about 70 °C to encompass  $60 \pm 6$  °C to  $70 \pm 7$  °C in which case the temperature of Mitchnick et al., 75 °C, is encompassed by that range.

Galley et al. provide a general teaching for the preparation of sunscreen compositions comprised of metal oxides such as zinc oxide. Galley et al. disclose that the oil phase components are heated together to 70-75 °C and then mixed with the aqueous phase containing the metal oxide for 5-10 minutes. The emulsion is then cooled (See: Example 18 Column 9, lines 45-52; Example 19 Column 10, lines 20-26 and Example 20 Column 10, lines 61-67). Galley et al. disclose that fatty acid soaps, such as potassium stearate, are effective emulsifying agents that can be added to the composition (Column 4, line 52).

Halls discloses sunscreen compositions comprised of nano-size ZnO particles in the preferred range of 0.5-15% by weight (Column 4, lines 52-55). Halls provides compositions with 0.5, 1.0, 2.0 and 4.0% by weight zinc oxide in example numbers 8-11, respectively (Column 7, lines 1-8).

**Ascertainment of the difference between the prior art and the claims**

**(MPEP 2141.02)**

1. Mitchnick et al. do not expressly teach heating the mixture of ZnO particles and stearic acid to a temperature of less than about 80 °C for about 5 to about 10 minutes.

2. Mitchnick et al. does not expressly disclose the addition of ZnO in an amount of about 1% to about 4% by weight of the cosmetic composition.

**Finding of prima facie obviousness**

**Rational and Motivation (MPEP 2142-2143)**

1. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to prepare a composition containing zinc oxide and stearic acid by the procedure of Mitchnick et al. using the suggested heating period of 5 to 10 minutes of Galley et al. to produce metallic soap coated ZnO particles of the instantly claimed invention.

One of ordinary skill in the art would have been motivated to do this because once the emulsion is formed one of ordinary skill in the art would end the reaction and this is supported by the teachings of Galley et al.

2. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to prepare a composition of Mitchnick et al., using the

heating period suggested by Galley et al., containing zinc oxide in the percent weight range of about 1 % to about 4 % as suggested by Halls to produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Halls discloses that the sun protection factor can be adjusted by judicious selection of the amount of ZnO added (0.5 to 4.0 % by weight in this example) thus creating lotions for a wide variety of consumers seeking various levels of sun protection (See: Column 7, lines 1-8).

The Examiner notes for Applicant's benefit that claim 1 does not recite: 1) the amount of fatty acid and zinc oxide; 2) the size of zinc oxide; and 3) the structure of the fatty acid. These limitations are taught in the specification on page 12, lines 5-19 and page 27, lines 5-24. It is the Examiner's position that inclusion of these limitations into claim 1 would help distinguish the instant invention over the prior art.

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

***Claim Rejections - 35 USC § 103***

Claims 1, 6, 8, and 21-23 remain/are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishihama (WO 02/24153). Please note that the Examiner is relying on the US equivalent (US 6,949,248) of WO 02/24153 for translation of WO 02/24153.

**Determination of the scope and content of the prior art**

**(MPEP 2141.01)**

Nishihama teaches a process to prepare a oil in water emulsified sunscreen with the following components:

**TABLE 4**

**Example 6 O/W emulsified sunscreen**

1.	Powder of Example 2	12
2.	Zinc white	5
3.	Stearic acid	2
4.	Cetyl alcohol	1
5.	Petroleum	5
6.	Silicone oil	2
7.	Liquid petroleum	10
8.	Glyceryl monostearate (self-emulsifying type)	1
9.	Polyoxyethylene (25 mol) mono oleate	1
10.	Polyethyleneglycol 1500	5
11.	Beegum	0.5
12.	Purified water	55.5
13.	Perfume	suitable amount
14.	Antiseptic	suitable amount

The process (detailed in column 8, line 56 bridging column 9, line 3) involves adding components 10-12 with stirring at a temperature of 70 C to create a water phase. Components 3-9 were mixed with components 13 and 14 and heated to 70 C to create the oil phase. Note that this contains the fatty acid stearic acid. To the water phase was added powders of components 1 and 2 and dispersed with a homomixer. Zinc white is added at 5%, which the Examiner interprets to read on about 4% of instant claim 23. To the dispersion was added the oil phase, thus bringing zinc oxide into contact with stearic acid, and emulsified with a homomixer and after emulsification, the emulsion was cooled to 35 C with stirring.

**Ascertainment of the difference between the prior art and the claims**

**(MPEP 2141.02)**

Nishihama does not expressly teach a heating time for the mixture for about 5 to about 10 minutes.

**Finding of prima facie obviousness**

**Rational and Motivation (MPEP 2142-2143)**

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to heat the mixture of Nishihama for about 5 to about 10 minutes and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Nihsihama teaches that once emulsification is complete the mixture is then cooled. In the absence of evidence to the contrary, it is the Examiner's position that one of ordinary skill in the art can determine when the emulsification process is finished and such a time would fall in the range of about 5 to about 10 minutes.

In the absence of any criticality/unexpected results, the presently claimed invention is considered *prima facie* obvious over the prior art for the reasons of record and those stated above.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976).

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

**(10) Response to Argument**

I. Appellant asserts that "solid asymmetric particles" is clear and not indefinite.

Appellant asserts that the particles may be particles of a fatty acid and that "may" is definite. The Examiner cannot agree. It is the Examiner's position that "may" is permissive language and remains open to other elements. If the Examiner were to agree with Appellant then there would be an enablement problem because claim 1 clearly recites in line 3: "Melting said solid asymmetric particles to form melted fatty acid;". Many solid mineral crystals such as quartz are solid asymmetric particles but would not yield fatty acids upon melting.

II. Appellant asserts that in the primary reference of Mitchnick et al. there is no controlled contact (if any contact at all) between the zinc oxide and fatty acid because the zinc oxide is not added to a fatty acid component first but rather the fatty acid component is added to an aqueous zinc oxide component. It is the Examiner's position, that, in the absence of evidence to the contrary, the order of mixing steps is obvious.

See: In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.). It is the Examiner's position that Appellant is only asserting without any evidence that the zinc oxide and stearic acid would not come into contact. The Examiner agrees that the exact mixing time is not disclosed by Mitchnick et al. which is why the Examiner relied upon the teaching of the secondary

reference of Galley et al. for a general teaching of how long one of ordinary skill in the art should mix emulsions of metal oxides which is from 5-10 minutes.

Appellant asserts that the composition made in Mitchnick et al. is a creamy foundation, and such a composition would not be formed with solid asymmetric particles defined according to the present invention. The Examiner cannot agree. The instant invention and composition of Mitchnick et al. are both emulsions and therefore "creamy" by nature.

Appellant kindly reminds the Examiner that the reference of Halls teaches the unexpected discovery that pigment grade zinc oxide combined with magnesium aluminum hydroxystearate ( $\text{Al}_5\text{Mg}_{10}(\text{OH})_{31}(\text{C}_{17}\text{H}_{35}\text{COO})_4$ ) results in a sunscreen formulation that does not retain the expected whiteness or pigmentation after application onto the skin. This appears to the Examiner to read on a "vanishing cream" which happens to also be the focus of the instant invention as stated on page 4, paragraph 2 of the Appeal Brief. Appellant is arguing the reference individually and not as applied by the Examiner.

III. Appellant asserts that there is no teaching whatsoever in the US counterpart of the Japanese reference that even remotely suggests the addition of zinc oxide particles to melted fatty acid to form a mixture of zinc oxide and fatty acid and that it is unclear what, if any, zinc white and stearic acid contact there will be. The Examiner strongly disagrees. Nishihama clearly mixes an oil phase containing melted stearic acid and an aqueous phase containing zinc white (zinc oxide) and, as stated above, the order of mixing steps is obvious in the absence of evidence to the contrary. Appellant

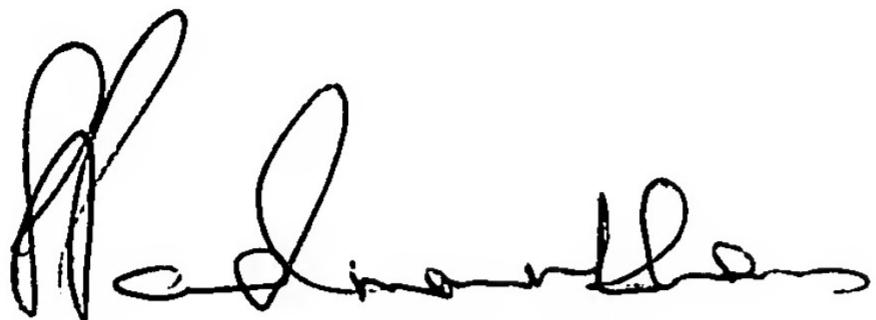
merely asserts there is no contact between the zinc oxide and stearic acid without any scientific evidence to substantiate such an assertion. In contrast it appears to the Examiner that evidence of contact between zinc oxide and stearic acid is evidenced by the resulting transparent composition as disclosed in Table 5 of Nishihama (column 9, Table 5). This is further evidence that the concept of making vanishing creams comprising zinc oxide and stearic acid is already known in the art.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Sreeni Padmanabhan

  
SPE/1617

Conferrees:



Robert Wax



Ernst Arnold